

The American Fertilizer

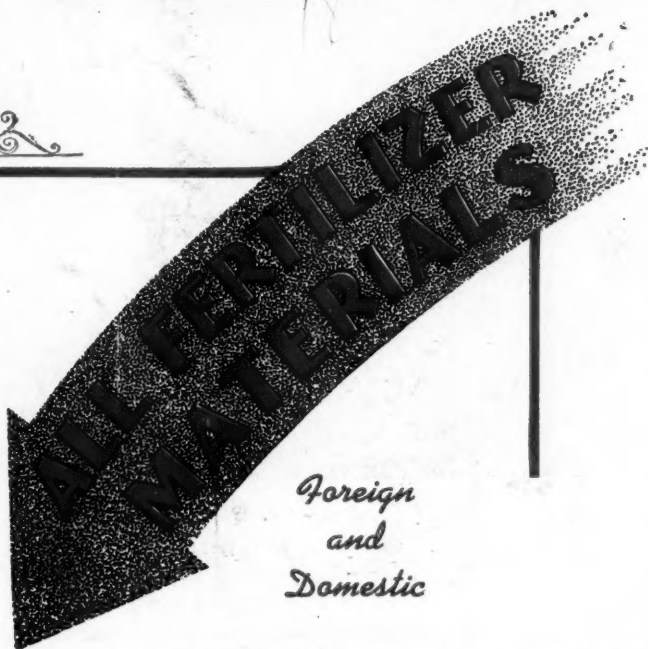
UNIVERSITY OF MINNESOTA
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JULY 1, 1944

No. 13



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AMMONIUM NITRATE
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SULPHATE of AMMONIA
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ORGANIC AMMONIATES
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SULPHUR
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ASHCRAFT-WILKINSON CO.

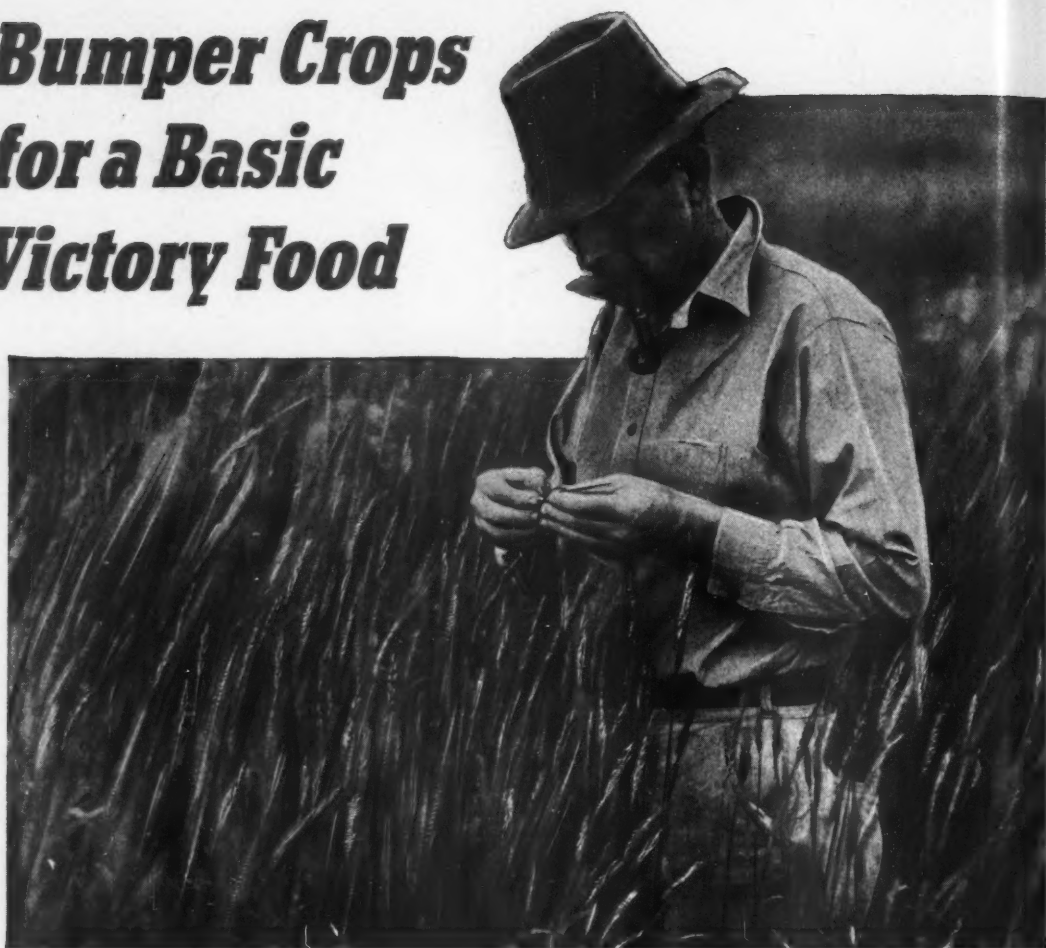
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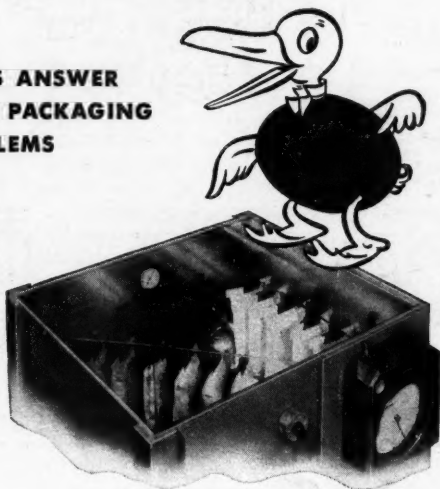
UNITED STATES POTASH COMPANY

PHILADELPHIA, PA.

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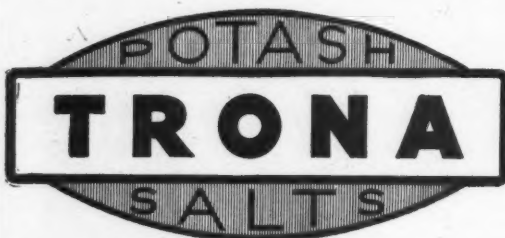
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See page 23



MENTION "THE AMERICAN FERTILIZER" WHEN WRITING TO ADVERTISERS.

... THE ...

AMERICAN FERTILIZER

"That man is a benefactor to his race who makes two blades of grass to grow where but one grew before."

Vol. 100

JULY 1, 1944

No. 13

The 1944 War Convention

Successful Season Reviewed and Plans for Increased Production Discussed.

Budget Adopted. Officers and Directors Re-elected.

A FEELING of pride in the production and delivery of this country's largest fertilizer output during the past year and a realization of the added problems to be solved during the coming year—these were the predominating attitudes of the executives assembled in Atlanta on June 19th, 20th and 21st, for the Twentieth Annual Convention of the National Fertilizer Association. The registration showed a total of 231 present, representing 114 companies, as well as the various war offices having to do with fertilizer production and distribution. It was strictly a business convention, the usual golf tournaments and other social features being conspicuous by their complete absence.

Election of Directors

That the membership is satisfied with the way the affairs of the Association are being conducted is indicated by the result of the elections. All members of the Board of Directors whose terms had expired, were re-elected for another three years. These members were:

Directors-at-large: Robert S. Cope, The Reliance Fertilizer Co., Savannah, Ga.; George Cushman, Long Island Produce & Fertilizer Co., Riverhead, N. Y.; Leon H. Davis, The Southern Cotton Oil Co., New Orleans, La.; John E. Sanford, Armour Fertilizer Works, Atlanta, Ga. C. T. Prindeville, Swift & Co. Fertilizer Works, Chicago, Ill., was elected to fill a vacancy in the term ending in June, 1945.

Directors nominated by the Districts: District 3, B. H. Brewster, III, The Baugh & Sons Co., Baltimore, Md.; District 6, R. L. King, Georgia Fertilizer Co., Valdosta, Ga.; District

7, F. J. Woods, The Gulf Fertilizer Co., Tampa, Fla.; District 8, H. A. Parker, Sylacauga Fertilizer Co., Sylacauga, Ala.; District 9, C. D. Shallenberger, Shreveport Fertilizer Works, Shreveport, La.; District 10, S. F. Elwood, The Farmers Fertilizer Co., Columbus, Ohio; District 11, W. H. Waples, Lynden Department Stores, Inc., Lynden, Wash. H. R. Ringler, The Buhner Fertilizer Co., Seymour, Ind., was elected to fill a vacancy in District 10 for the term that expires in June, 1945.

Officers Re-elected

Immediately following the adjournment of the Convention, the Board of Directors met and re-elected the following officers for the year ending June, 1945: *President*, H. B. Baylor, International Minerals & Chemical Corp., Chicago, Ill.; *Vice-President*, Weller Noble, Pacific Guano Co., Berkeley, Cal.; *Executive Secretary and Treasurer*, Charles J. Brand, Washington, D. C.

Session of June 20th

In opening the Convention on June 20th, H. B. Baylor, president of the Association, said: "We are gathered here today to transact the business necessary for the operation of our Association in the coming year, to review the past year, and to discuss the common problems that confront us in carrying out our duties and performing such functions as will contribute to the war effort." Mr. Baylor pointed out that fertilizer consumption during the past year may reach 12,000,000 tons, the largest tonnage in history, and that during the coming year new records will be established.

He discussed briefly the work of the Association—the holding of forty regional meetings at the request of Government agencies, publication of *Fertilizer War Notes*, distribution of motion pictures, sale of *Hunger Signs in Crops* with a reprint in sight. He called attention to the fact that thirty-five new active members joined the Association, with only seven withdrawals—three of them because of discontinuance of operations; that there are now 468 members, the highest of any year in the Association's history except the two years in which the industry operated under its code. Mr. Baylor's address is given in full elsewhere in this issue.

P. H. Groggins, chief, Chemicals & Fertilizers Branch, War Food Administration, described the official responsibilities of his agency in determining fertilizer requirements, in acting as claimant for agriculture, in negotiations with other Government agencies,

Mr. Groggins commended the work done by the WFA Fertilizer Industry Advisory Committee (1) by advising as to probable farmer demand for fertilizers in each area, (2) by advising as to seasonal requirements and sectional manufacturing practices, (3) by advising as to the best use of fertilizer materials which are available, (4) by supporting the claims which they have recommended, (5) by aiding in the writing of fertilizer orders, and (6) by warning in advance of national and regional needs for new production facilities.

In concluding, Mr. Groggins said: "I want to take this opportunity to voice my personal appreciation, as well as the appreciation of my colleagues, for the constructive cooperation which we have had from the fertilizer industry since the outbreak of the war. Inasmuch as we are all interested in concluding our wartime responsibilities in a manner justifying lasting pride, we are counting on your con-



Charles Ellis, Jr., Mutual Fertilizer Co.;
E. C. Westbrook, College of Agriculture;
John L. Cope, Reliance Fertilizer Co.



The Officers of the National Fertilizer Association: Executive Secretary and Treasurer, Charles J. Brand; President, H. B. Baylor, International Minerals & Chemical Corp.; Vice-President, Weller Noble, Pacific Guano Co.

in providing a program of distribution through customary commercial channels. "It is our policy," said Mr. Groggins, "to avoid interfering with our democratic system of distribution. We know if we are successful in establishing a claim which will meet the requirements of agriculture and the demands of farmers we can obviate the necessity of rationing or other forms of Government supervised distribution. It is recognized that smooth functioning of a distribution program depends to a large degree on its flexibility. In this connection credit should be given to the War Production Board for its understanding cooperation in interpreting and administering our program so as to take care of the multitudinous problems which are expected to arise in the complex program of providing our Nation's farmers with necessary chemicals."

tinued assistance. In behalf of the Office of Materials and Facilities, I want to assure you of our cooperation and sympathetic understanding of your problems."

Dale C. Kieffer, chief, Agricultural Chemicals Section, War Production Board, discussed the fertilizer supply outlook. He said in part: "We in the Chemicals Bureau of the War Production Board are proud of the production record which has been established by all branches of the fertilizer industry. In the face of terrific obstacles, due to shortages of labor, material, and shipping, the industry has still been able to offer almost unbelievable quantities of fertilizers to the farmer. At the beginning of the war, potash production in this country amounted to approximately 312,000 tons K_2O . Beginning in 1940 the potash industry entered upon an expansion program which will carry production in 1944

to approximately 813,000 tons K_2O , almost twice as much potash as this country has ever consumed in any pre-war year. Production in 1945 is expected to reach a total of about 875,000 tons of K_2O . This is a production record that any industry can exhibit with pride.

"In 1939 the production of normal and concentrated superphosphate in the United States was equivalent to 4,210,000 tons of 18 per cent material. In 1943 production was in excess of 7,000,000 tons. In 1944 it will be approximately 8,560,000 tons, and in 1945 it should exceed 9,000,000 tons.

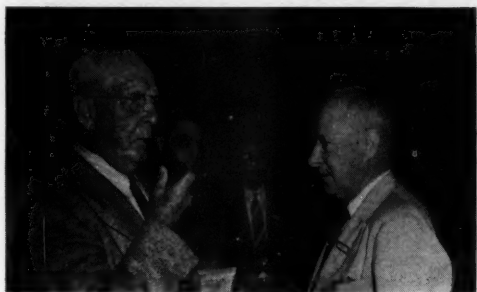
"In 1939, 342,000 tons of inorganic nitrogen were made available for agricultural use in this country, as compared to 612,000 tons in 1943-44 and an estimated 644,000 tons in 1944-45 (assuming 150,000 tons of N from Chile).

"In order to establish these records it has been necessary to provide plant expansion

culture in the United States, Puerto Rico, and Hawaii 493,000 tons of inorganic nitrogen. This compares with 522,000 tons for the same area last year.

"It is impossible at this time to estimate accurately the tonnage of nitrate of soda that will be imported from Chile. The development of the military situation will determine to a great extent how much material will be received. During the year just closing, slightly less than 600,000 tons were received, and stocks on July 1st are expected to be almost negligible. An importation of approximately 1,000,000 tons of nitrate of soda has been made in only one recent year and then solely because of a drastic shortage of agricultural nitrogen due to military demands. All domestic sources of nitrogen must be utilized to the fullest extent if we are to meet the agricultural requirements for the coming year and avoid a heavy drain on our shipping."

"Planning for Post-War Agriculture" was



Charles H. MacDowell, honorary life member;
J. F. Benton, Raymond Pulverizer Div.,
Combustion Engineering Co.



Ray L. King, Georgia Fertilizer Works; O. D.
Culpepper, Swift & Co. Fertilizer Works;
Dr. Arthur M. Smith, Synthetic Nitrogen
Products Corp.

programs, to increase output in existing plants, and to work out shipping programs for the importation of nitrate from Chile."

Mr. Kieffer described, in considerable detail, the allocation of potash and efforts to increase superphosphate production including labor and sulphuric acid problems. As to the nitrogen supply, he said: "Any attempt to estimate the supply of nitrogen available for agriculture for the coming year is subject to considerable uncertainty. Production and requirements for military purposes indicate that no nitrogen will be available for agriculture from ordnance plants after November 1st. The War Shipping Administration indicates that the shipping situation will be uncertain and this will be reflected in the importation of Chilean nitrate of soda. * * * Exclusive of organics and imported nitrate of soda, we estimate that there will be available for agri-

discussed by Norris E. Dodd, chief of the Agricultural Adjustment Agency. Mr. Dodd's address was broadcast directly from the meeting room as a part of the Yellow River Farm Program of Station WAGA of the Blue Network, through the cooperation of Mr. Channing Cope, farm director of that station and manager of the Agriculture Division of the Georgia Power Co.

Mr. Dodd stated that the assistance given farmers in carrying out soil saving practices was effective in increasing crop yields "so when Pearl Harbor came American agriculture was prepared. We had large stock piles of basic farm commodities. We had more corn and wheat than ever before in our history and plenty of cotton and other fibers. Livestock numbers were climbing to all-time record levels. We had great reserves of food—all built up without financial ruin to the

farmer. In fact, farm income and the general economic status of the farmer had been substantially improved. *** Since 1937 when the conservation program first became fully effective crop yields in this country have increased almost one-fourth above the 1923-32 average. Who could ask for a better dividend—particularly in time of war—from the productivity we stored in our soil banks during the years of peace?" Eut, he pointed out, we are drawing heavily on our soil reserve, hence the AAA has assisted farmers by furnishing soil building materials such as phosphates, potash, and lime. In this connection, Mr. Dodd said: "We don't want to interfere with the business of the fertilizer industry. In fact, we want to increase your business. When AAA purchases fertilizer we are in effect providing price supports for your industry. These supports are similar to the price supports for farmers which have encouraged greater food production. We don't

the southeastern States. The tour included a visit to several farms in the Chattahoochee Soil Conservation District near Gainesville, Ga., and those who made the trip were much impressed by the fact that idle and eroded land is being put to profitable use through carefully planned farm programs. The Soil Conservation Service also had on display in the hotel lobby models, photographs, maps, and charts showing how the work is carried on and results that are being obtained.

Session of June 21st

In addressing the convention on "Post-War Relations Between Government and Industry," Charles J. Brand, executive secretary and treasurer of the Association, referred briefly to the beginning of these relations sixty or seventy years ago with the passage of the first State fertilizer control laws. He said: "The extent to which Government should invade the field of private business or assume



Dale C. Kieffer, War Production Board; Vice-President Weller Noble; V. W. Suellau, War Production Board



Miss Josephine M. Feeley, National Fertilizer Association; Executive Secretary and Treasurer Charles J. Brand; Dr. T. S. Buie, Soil Conservation Service; President H. B. Baylor

believe there is anywhere near enough fertilizer and limestone being produced to meet the maximum requirements of our soils."

"In considering post-war agriculture, I think we should set as our goal an agricultural pattern which will produce the variety of foods necessary for the building of a strong, healthy population. I cannot help but think that a cereal, livestock, legume production combination will be most efficient in maintaining our soils and providing a properly balanced diet. I repeat, I am confident that the members of this organization—who have so effectively contributed to our production for war—will make an even greater contribution to our soil needs in time of peace."

More than forty persons attending the convention took the Soil Conservation tour on Tuesday afternoon under the leadership of Dr. T. S. Buie, regional conservator, SCS, in

direction of it has been a growing problem for many years. This will never be less of a problem no matter which political party is in power." Mr. Brand discussed the distribution of fertilizers by AAA, the production and distribution of fertilizer by TVA, and problems involving post-war operation or disposal of Government-controlled production facilities. Among the conditions that might justify Government in invading private fields he mentioned (1) careless use or wanton waste of natural resources, (2) failure to provide the nation with an adequate supply of an essential commodity, (3) monopoly abuses such as are prohibited by the antitrust laws, or (4) charging the consumer an excessive price. None of these conditions, of course, prevails in the fertilizer industry. Mr. Brand offered four suggestions: (1) As far as is necessary, Government should be the source of sound

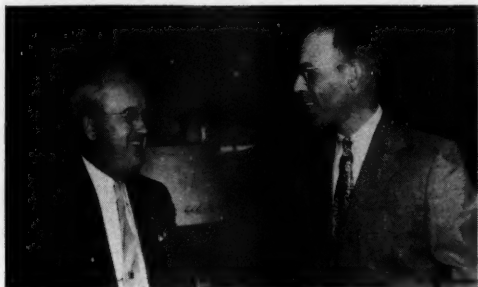
general rules for the conduct of all business, but it should leave the actual operation of business to private enterprises under whose direction the most efficient and the most beneficent industrial economy in history has been developed in this country; (2) it should promote the interests of American agriculture by research, experimentation, education, and demonstration—not by engaging in the business of manufacture and distribution of commodities for farm use; (3) it should take proper and adequate steps to provide for future national defense, keeping wartime plants in stand-by condition to whatever extent may be necessary; (4) surplus property acquired for war purposes but no longer needed for the war emergency should be disposed of according to law, and with a deep sense of public responsibility and a determination on the part of Government officials to do what, on balance, is best for the public welfare in the long run.

synthesized the innumerable life-sustaining compounds.

"Soil fertility determines whether plants are food of only fuel and fattening values or of body service in growth and reproduction. Because the soil comes in for only a small percentage of our bodies we are not generally aware of the fact that this 5 per cent can predetermine the fabrication of the other 95 per cent into something more than mere fuel."

By means of maps and charts Dr. Albrecht showed how our soils were formed, why they differ so greatly in different sections of the country, and many other interesting facts. His address was repeated a little later as a part of the Yellow River Farm Program of Station WAGA.

Walter S. Brown, director of the Agricultural Extension Service of Georgia, spoke on post-war problems in agriculture. "Broadly speaking," Mr. Brown said, "one of our chief



Charles D. Wagner, Bemis Bro. Bag Co.;
W. A. O'Brien, Magnolia Fertilizer Co.



P. J. Frosser, The Baugh & Sons Co.; George
Cushman, Long Island Produce & Fertilizer
Co.; Walter S. Rupp, The Baugh & Sons Co.

Dr. Wm. A. Albrecht, chairman, Department of Soils, University of Missouri, spoke on "Soil Fertility in Its Broader Implications." He brought out in a very clear and forceful manner the relationship between the soil and the use of lime and fertilizers, the composition of the crop, and the resultant effect on the growth, health, and vigor of animals and of human beings. "Food is fabricated soil fertility. * * * It is soil fertility that constitutes the 5 per cent (of the crop) that is plant ash. It is the handful of dust that makes up the corresponding percentage in the human body. Yet it is the controlling force that determines whether nature in her fabricating activities shall construct merely the woody framework with leaf surfaces catching sunshine and with root surfaces absorbing little more than water, or whether inside of that woody shell there shall be

post-war problems will be to prevent the breaking down or reversal of some of the desirable trends which have been in evidence not only during the war but for a good many years prior to the present war. Some of the more important of these trends are (1) fewer people on farms, (2) larger production per farm worker, (3) better balance between crop and livestock enterprises, and (4) more complete and more efficient utilization of farm land and farm labor." Mr. Brown pointed out that one fundamental problem in the South has always been the combined disadvantage of heavy per-acre farm population and relatively low producing soil. For many years the agricultural research and educational agencies have been working on a soil building and soil conserving program, and during the last decade much progress has been made, especially in obtaining a better balance

between crop and livestock enterprises. "For example, in Georgia we are planting little more than 25 per cent of the land in cotton that we were planting twenty-five years ago, but we are producing practically half as much cotton. The great majority of this land taken out of cotton has gone into grain, hay, pasture, and specific soil building crops. * * * The 1943 cash income from livestock and livestock products was \$98,174,000, while the income from cotton and cottonseed was \$92,014,000."

Mr. Brown feels that to meet competition with synthetic fiber and with low wage scales in foreign countries the cotton farmer of the South will be compelled to make changes and adjustments in his methods of production and marketing through mechanization of his operations. As to the part played by fertilizers in crop production in Georgia, Mr. Brown stated that "Research indicated that commercial fertilizers account for slightly more than half of our cotton yield, a little more than two-

(2) That the rate in sales under or in connection with Government bids for Federal agricultural programs be $2\frac{1}{2}$ cents a ton as compared with the basic rate of 4 cents, this special rate not to be applicable to retail sales made under the purchase order plan. The Board estimated that the new rate, together with income from other sources, would produce approximately \$250,000, of which approximately \$75,000 would be available for public relations work, plans for which have not yet been completed. The recommendations were adopted by the convention.

The Memorial Record

George W. McCarty feelingly presented, while the members stood in reverence, a list of persons in or well known in the fertilizer industry who departed from life during the year. These included, among numerous others, Edward L. Robins, a former president of the Association; George N. Peek, a life-



Dale C. Kieffer, War Production Board;
Channing Cope, Station WAGA



P. H. Groggins, War Food Administration;
Channing Cope, Station WAGA; Executive
Secretary and Treasurer Charles J. Brand;
President H. B. Baylor

thirds of our tobacco yield, about one-fourth of our wheat, and from one-half to 90 per cent of our yield of vegetable crops. We are also learning that proper fertilization of grassland is just as important as fertilizing cultivated crops. It is obvious then that more intelligent use of fertilizer will be an extremely important factor in our post-war agriculture."

Budget Adopted

President Baylor reported to the convention that he had designated the members of the Board of Directors to serve as the Budget Committee; that they had prepared a budget which was subsequently considered by the Board as such; and that the Board had recommended: (1) That for next year the basic rate of dues, which was $2\frac{1}{2}$ cents a ton on bagged goods this year, be raised to 4 cents, with suitable adjustments in the other rates.

time friend of all agriculture; Walter W. Brown, who has made such valuable contributions, through his trade journal, to the fertilizer industry. In all, twenty members of the Association and fifteen others closely affiliated with the industry have passed away since the previous Annual Convention.

Soil Improvement Committee Meets

The Soil Improvement Committee met during the afternoon of June 21st. J. Rucker McCarty, chairman for the past two years, presided; Nelson T. White was elected chairman for the coming year, and A. H. Carpenter, vice-chairman.

Charles J. Brand reported that expenditures during the year had been in accordance with the budget.

H. R. Smalley reported briefly on activities:

(Continued on page 20)

Our Association in Wartime^{*}

By H. B. BAYLOR

President, The National Fertilizer Association

WE ARE gathered here today to transact the business necessary for the operation of our Association in the coming year, to review the past year, and to discuss the common problems that confront us in carrying out our duties and performing such functions as will contribute to the war effort.

The fiscal year just closing will undoubtedly see the largest consumption of fertilizers in history. It now appears that a figure of almost 12,000,000 tons will be reached, approximately five per cent more than in the calendar year of 1943. If it had not been for rains and floods in some areas just at the beginning of the season and for labor shortages in all areas, consumption would have been even larger.

In terms of quantity, superphosphate is the most important fertilizer material. Its production has increased rapidly in the last few years. From a low of 1,705,000, basis 18 per cent, in 1932, production increased to 7,072,000 tons in 1943. In the first quarter of 1944, 1,999,804 tons were produced which is at the rate of 8,000,000 tons a year. New plants now under construction or authorized will add about another three-quarters of a million tons. At present 90 per cent of the production is in the form of normal superphosphate and 10 per cent in the form of concentrated superphosphate.

This potential production of 8,750,000 tons is more than double the production in 1939, only five years ago; it is 125 per cent above the average production of the ten pre-war years ending 1939; and double the average production of the past ten years. The present favorable economic condition of our customer, the farmer, the food goals set by the War Food Administration, and the grants-of-aid distribution of superphosphate by AAA will, without a doubt, create sufficient demand to consume next year's supply. The post-war demand may not be as large, we may be faced with foreign competition, the economic structure may be changed.

The situation regarding nitrogen supplies is

somewhat uncertain because of the changing requirements of the Army and Navy. In the fiscal year just ending we consumed over 600,000 tons of nitrogen, 25 per cent more than the previous year. Fully as much seems in sight for next year, and perhaps more, the importation of nitrate of soda from Chile being, perhaps, the most variable factor.

Potash production will be larger than ever before and, according to present estimates, there will be 10 to 15 per cent more for agriculture in 1944-45 than in 1943-44. I am not going further into the details of the material supply situation because other speakers on the program are much better qualified to speak on these topics from an official standpoint.

The consumption of mixed fertilizers has kept pace with the total use of plant food. Exact figures are not available but careful estimates indicate that about 7,500,000 tons of the more than 11,000,000 tons total used were in the form of mixed fertilizer. The average plant-food content of this mixed fertilizer was high, reaching 21 per cent. With increased supplies of nitrogen, phosphoric acid, and potash obtainable, and with the present range of established grades, this average may be still higher in the 1944-45 year. Mixed fertilizers, unless curtailed by labor shortages or transportation difficulties, will reach possibly 8,500,000 tons during the coming fiscal year.

In 1942 the Agricultural Adjustment Agency distributed as grants-of-aid in its soil conservation program 1,194,791 tons of fertilizer. Although this figure includes some mixed fertilizer and some potash, most of the goods so distributed were in the form of 18 to 20 per cent superphosphate. Because of the need for fertilizer for food crops to meet the goals of the War Food Administration, WFA somewhat-curtailed distribution by the AAA so that only 862,711 tons were so handled in 1943. The AAA has gone on record that it is interested in distributing only such tonnage of superphosphate as is surplus over commercial demand, but is prepared to distribute as much as 4,000,000 tons annually on this basis. At the present time, in addition to its

^{*}An address at the Annual Convention of the National Fertilizer Association, Atlanta, Ga., June 20, 1944.

distribution of superphosphate, it is distributing in Maine, some 4,000 tons of Canadian ammonium nitrate, the Agency absorbing approximately two-thirds of the cost and the farmer paying one-third. Members of the industry need to consider carefully the implications of these activities.

In conformance with the resolutions adopted at several previous annual meetings, your Association has continued to cooperate in every possible way with the several Governmental war agencies in the war effort. Our principal contacts, though by no means the only ones, have been with War Food Administration, War Production Board, Office of Price Administration, and Office of Defense Transportation. At the request of one or more of these agencies we have arranged and held forty regional meetings for the purpose of permitting the various officials to discuss in open forums with the members of the industry and with State and Federal agricul-

continued the publication and distribution of *Fertilizer War Notes* to all known members of the fertilizer industry and to a selected list of more than 1,000 agricultural workers and State officials. In this publication we try to carry information regarding all official actions of the various war agencies that directly affect the manufacture and distribution of fertilizers including reports of the various industry advisory committee meetings. During the past year, twelve issues of *Fertilizer War Notes* have been distributed and forty-three in all since the beginning of the war.

We have now in circulation 108 copies of our three motion picture films. During the past year these have been shown to some 3,500 audiences containing 210,000 people.

You will remember that in 1941 we published, in cooperation with the American Society of Agronomy, the book on nutrition deficiency symptoms, *Hunger Signs in Crops*. The Association assumed the responsibility



A trio from Swift & Co. Fertilizer Works: Austin Cooke, C. D. Smith, Paul Reynolds



Hugh Craig, Oil, Paint & Drug Reporter; President H. B. Baylor; Executive Secretary and Treasurer Charles J. Brand; Dr. T. S. Buile, Soil Conservation Service; Dr. H. B. Mann, American Potash Institute; H. R. Smalley, Director of Soil Improvement Work, N. F. A.

tural officials the many problems involved in the manufacture and distribution of fertilizer, such as the supply and demand and the allocation of raw materials by WPB, the establishment of lists of permitted grades and the administration of control orders by WFA, the establishment of maximum prices by OPA, and transportation regulations by ODT. In my opinion, in no other way could the existing mutual understanding and cooperation between Government officials and the industry have been achieved. No other industry, we are told, has a better record of cooperation and achievement of war aims than ours. Many times daily the members of the Washington office staff are in telephone or personal touch with these war agencies, seeking or giving information regarding the industry or some of its problems.

At the request of these agencies we have

for the sale and distribution of this book, 14,000 copies of which were printed. It is particularly gratifying to be able to state that this edition is sold out, and because orders for more than 400 copies of it have of necessity been declined since January 1st, the Board of Directors has authorized a reprint.

All the other regular work of the Association has been carried on as usual but at an increased volume and speed necessitated by the war conditions. Time does not permit my referring in detail to these many activities with which you are all familiar.

During the past year, thirty-five new active members joined the Association and seven withdrew, three of whom discontinued operations. This leaves our total membership at 468, the highest of any year of the Associa-

(Continued on page 20)

IT MAY BE

FARM CROP CEILINGS

Congress agreed to extend the price control act until July 1, 1945, with certain amendments. One of the amendments makes it necessary for OPA to fix ceilings on farm crops at least fifteen days before planting season.

FARM MACHINERY

Quota restrictions were removed (Limit Order L-257, Direction 3) to permit small manufacturers to engage in unlimited production of farm machinery, equipment and repair parts made entirely of surplus material or materials obtained under AAA ratings. It may be, small manufacturers soon will receive a new favorable priority ruling.

CROP PROSPECTS

Present indications are for a bigger crop of fruits and vegetables than last year. Corn should show a good yield. Wheat is going for a bumper crop. Farm land is bringing top prices, principally from farmers who have the money for substantial down-payments. These large down-payments will assure more stability of ownership. Foreclosures will not take on the proportions they did after the last war. Furthermore, farm land should still go higher when servicemen return and find they can buy farms with money loaned to them by the Government.

LABOR

With the invasion, strikes seem to be at a low ebb. It shouldn't be long before the epidemic breaks out. Although unions are laying low at the moment, it would be wrong to assume they are not doing a lot of thinking, planning and spade work. It may be, very shortly they will be asking increases in basic wage rates. They will want these increases before the end of the war, using such arguments that it will help keep up prosperity and sustain purchasing power. Perhaps the unions can use these increases to good advantage on the servicemen when they return. It may ease some of their headaches to be able to say to them, "See what we did for you while you were away." But there still will be a lot who will need a better catch

By SAMUEL L. VEITCH

phrase than that to make them forget some of the things the unions didn't "do for them while they were away."

WHEN GERMANY QUILTS

It may be, when Germany gets out of the war, the Army will demobilize about 250,000 men monthly. War orders will be decreased almost to one-half of their present dollar value. Rationing may end on a great many items. Taxes will stay just about where they are. The manpower situation will ease up with civilian industries getting the green light to start civilian production. The only thing that seems to keep Germany in the war is fear of retribution, fear on the part of leaders concerning their personal fate. There are already some signs German troops have had just about enough of the whole business.

RE-EMPLOYMENT OF VETERANS

Recently, Selective Service Headquarters issued its first general memorandum on how it proposes to carry out the Congressional Policies. The subject is of interest not only to servicemen and their families, but also to those now holding jobs vacated by men and women serving in the armed forces and also to employers generally. The law requiring the re-employment of veterans will be strictly enforced. The law provides that employers need not rehire veterans if war conditions make it "unreasonable or impossible" for them to do so. But a veteran cannot be refused merely because it is inconvenient. Highlights in the memorandum issued by the Selective Service deal with seniority, the ability of the veteran to fill the upgraded job, the discharge of a non-veteran, the veteran's option, the veteran "certificate" indicating satisfactory completion of service, and a number of other details. The act requires the veteran to make application for re-employment within forty days after he is relieved from training and service. It would be well worth your while to follow this act. It may save you trouble at some future date, as a veteran does have redress. Incidentally, veterans will be permitted to make loans for the purpose of buying farms. They will, however, be required to have farm knowledge to qualify for such loans.

THE AMERICAN FERTILIZER

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PUBLISHED EVERY OTHER SATURDAY BY

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INDUSTRY AND ITS ALLIED INDUSTRIES

PIONEER JOURNAL OF THE FERTILIZER INDUSTRY

WARE BROS. COMPANY

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A. A. WARE, EDITOR

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Fertilizer Material Price Regulations Consolidated

The grouping of all but a few minor fertilizer raw materials into a single price regulation, with specific prices for sales to fertilizer manufacturers and governmental departments and agencies, is announced by the Office of Price Administration.

The new revised regulation (effective July 5, 1944) makes it possible for fertilizer manufacturers to check maximum prices for all of the principal raw materials purchased by them by referring to one regulation. Previously, five price regulations affected the various products.

The general level of prices for the raw materials has not been changed, and no changes will result in the established prices farmers are presently paying for finished mixed fertilizers, OPA said.

The following general classifications of fertilizer materials are covered by the revised regulation: chemical nitrogenous fertilizer materials, the major organic nitrogenous fertilizer materials, the several grades of superphosphate, and the several kinds of potash materials.

The consolidation of the materials into one regulation was accomplished by broadening the scope of Maximum Price Regulation 205, which governed maximum prices of sulphate of ammonia, except in the Western States.

Revised Maximum Price Regulation No. 205 (Fertilizer Raw Materials) covers all sales of the following materials in the 48 States and the District of Columbia:

Chemical Nitrogenous Fertilizer Materials: sulphate of ammonia, nitrate of soda, nitrate of soda-potash, calcium cyanamide, urea compound, ammonium nitrate-lime compound, nitrogen solugen solutions and urea-ammonia liquors, ammoniacal liquors, anhydrous ammonia;

Organic Nitrogenous Fertilizer Materials: process tankage, dried activated sewage sludge, castor pomace and unground castor cake;

Superphosphate: pulverized and granulated superphosphate, triple superphosphate, and double superphosphate.

Potash: muriate of potash, manure salts, sulphate of potash, and sulphate of potash-magnesia.

Convention Observations of a Beginner

ONE could never deny the National Fertilizer Association Convention in Atlanta wasn't a hot success. You could fry a wheatcake on the railroad station platform. This is the impression one got on Monday morning upon arriving, but felt much cooler after talking with some of the native folk describing the heat of the day before. They said the official weather report gave the temperature as 101° in the shade, and no one could find the shade. Wonder why they pick a deep southern section for a convention in the summer time? Surely everything is as much rationed there as it would have been in a much cooler place.

Have you ever noticed that although it may start raining from a perfectly clear sky, there is always someone who immediately starts walking around with an umbrella? C. B. Robertson of the Robertson Chemical Corporation was very much in the same position. He was surely on his toes and came prepared for the heat, by wearing one of those blue and white striped seersuckers.

So many people were talking about the heat, one had to look up a program to be sure the opening address wasn't being given at the Atlanta Weather Bureau. As Monday evening approached, a thunderstorm followed a burning sun, and it's almost unbelievable the way the intense heat faded away into pleasant coolness. From there on until the end of the Convention, although it was warm, no one could be said to have been really uncom-

fortable. In fact, one fellow was so relieved by the breaking of the heat, he shuttled it downtown by himself and proceeded to tie on a "beautiful package." I watched him get out of a cab, which he did with a bit of difficulty, and I noticed as he made the hotel entrance, he had one of the "walking-running" variety. He only missed the front door of the Biltmore by a couple of feet. Not bad, considering the over-all condition.

Tuesday morning was the starting time of the regular schedule of meetings. The Association President, H. B. Baylor, Vice-President of International Minerals and Chemical Corporation, gave the first address. Things were running along at that moment very smoothly until, as is sometimes the case, the loud speaker system developed a dental whistle. Not bad, but enough to cause Executive Secretary of the Association, Charles J. Brand, to become visibly jittery. You could see a relaxation come over him as the apparatus was adjusted to a clear baritone quality.

Later on during the morning session, Mr. Brand singled out two of the Old Guard, Charles H. MacDowell and H. R. Bates, asking them to stand in recognition of their long and faithful association with the fertilizer industry. Both looked the picture of health. Speaking of health, H. C. Moore of Armour Fertilizer Company seems to be a shining example. It was rumored, however, that he

(Continued on page 22)



ON THE SOIL CONSERVATION DEMONSTRATION TOUR

Norris E. Dodd and T. R. Breedlove, Agricultural Adjustment Administration; Clark Jones, owner of the demonstration farm

Conventioners inspect a field of four-year-old kudzu on a conservation demonstration farm

Register of Attendance at the Twentieth Annual Convention of the National Fertilizer Association, held at Atlanta, Georgia, June 19, 20, 21, 1944

HONORARY LIFE MEMBER

C. H. MacDowell, College Point, Fla.

FERTILIZERS AND FERTILIZER MATERIALS

Albany Warehouse Co., Albany, Ga.
J. P. Champion
American Cyanamid Co., New York, N. Y.
T. L. Wilkerson
H. W. Arrowsmith, Atlanta, Ga.
American Limestone Co., Knoxville, Tenn.
Furman Smith
L. G. McGraw, Columbia, S. C.
American Potash & Chemical Corp., New York, N. Y.
J. Russell Porter, Atlanta, Ga.
American Potash Institute, Washington, D. C.
H. B. Mann, Atlanta, Ga.
Americus Oil Co., Americus, Ga.
R. L. McMath, Jr.
Anderson Fertilizer Co., Anderson, S. C.
Geo. W. Gage
Armour Fertilizer Works, Atlanta, Ga.
J. E. Sanford
C. F. Hagedorn
John A. Becker
C. C. Arledge
T. E. Camp, Jr.
A. H. Carpenter
Tracey Cunningham
R. G. Kreiling
Harry C. Moore
H. M. Arnold Fertilizer Co., Monroe, Ga.
H. M. Arnold
Ashcraft-Wilkinson Co., Atlanta, Ga.
Lee Ashcraft
Robert E. Ashcraft
George W. McCarty
Trenton Tunnell
Van W. Wilkinson
Rees F. Fraser, Charleston, S. C.
The Barrett Division, Allied Chemical & Dye Corp., New York, N. Y.
R. H. Groebe
E. W. Harvey
L. O. Hinton, Atlanta, Ga.
Roy S. Marsden, Atlanta, Ga.
Charles L. McDaniel, Atlanta, Ga.
George W. Suggs, Atlanta, Ga.

The Baugh & Sons Co., Baltimore, Md.
B. H. Brewster, III
P. J. Prosser
W. S. Rupp
Blue Belt Fertilizer Co., Savannah, Ga.
C. M. Smith
Buhner Fertilizer Co., Seymour, Ind.
E. J. Buhner
Cartledge Fertilizer Co., Cottondale, Fla.
R. H. Cartledge
Catawba Fertilizer Co., Lancaster, S. C.
R. A. Beckham
W. G. Taylor
Chamberlin & Barclay, Inc., Cranbury, N. J.
W. H. Gordon
Chilean Nitrate Sales Corp., New York, N. Y.
A. N. Myers
Roy F. Camp, Montgomery, Ala.
Edwin Sterne, Jr., Atlanta, Ga.
Cochran Fertilizer Plant, Butler, Ga.
D. O. Brinkley
Consolidated Mining & Smelting Co., San Francisco, Cal.
Ray E. Nei ig
Cumberland Chemical Co., Hopkinsville, Ky.
Henry Aaron
Cuthbert Gin Co., Cuthbert, Ga.
W. W. Broach
Dothan Guano Co., Dothan, Ala.
A. A. Morris
E. I. duPont de Nemours & Co., Wilmington, Del.
R. W. McClellan
Erling A. Hedin
E. D. Ries
E. F. Schumacher
Marion N. Crady, Memphis, Tenn.
Ove F. Jensen, Chapel Hill, N. C.
Eastern States Farmers' Exchange, West Springfield, Mass.
M. H. Lockwood
Farm Service, Inc., Opelousas, La.
J. W. Anthony
Farmers Cotton Oil Co., Wilson, N. C.
T. F. Bridgers
Farmers Union Warehouse Co., Monticello, Ga.
Allen Herschel

(Continued on page 22)

BRADLEY & BAKER

FERTILIZER MATERIALS - FEEDSTUFFS

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504 Merchants Exchange Bldg., St. Louis, Mo.

FERTILIZER MATERIALS MARKET

NEW YORK

Buyers Contracting for Next Year's Materials. Some Manufacturers Not Taking All Sulphate of Ammonia Allocated. Increased Superphosphate Production Depends on Labor Supply. Less Ammonia Liquor Expected.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, June 27, 1944.

Sulphate of Ammonia

With allocations having been made, in most cases buyers have contracted for entire quantity allocated to them, but some of the larger buyers have only placed orders for a portion of the material allocated, marking time before booking up fully. However, there is no piling up of stocks and it is anticipated that the quantities as allocated will in due time be fully contracted for.

Muriate of Potash

As far as can be ascertained, all buyers are contracting for total quantities of material allocated to them, and in spite of increased production there will undoubtedly be no surplus of this material.

Superphosphate

In spite of labor difficulties, production has been maintained with an expected increase for the year over last year's production. It is expected that OPA may establish new ceilings, but unless the labor situation can be taken care of, increased ceilings will not help the production program.

Ammonia Liquors

We have some advices that there will be a considerable decrease in the amount of solutions available to the fertilizer manufacturers and if the decrease in supply of this material is as large as anticipated, it will naturally increase the demand for other ammoniates.

Phosphate Rock

Shipments to superphosphate manufacturers continue heavy and reflect the increase in the superphosphate program for the coming year. Some rock producers have contracted for their output of high grade for the balance of the year. The market remains firm throughout.

BALTIMORE

Market Quiet. Little Organic Material for Fertilizer Use. Increase in Superphosphate Ceiling Expected.

Exclusive Correspondence to "The American Fertilizer"

BALTIMORE, June 29, 1944.

There have been no outstanding features in connection with fertilizer business during the past two weeks, as everything is going along in more or less routine way as is usual at this time of the year.

Ammoniates.—The situation is unchanged and practically all tankage and blood is now going into the manufacture of feeding materials.

Castor Pomace.—Producers are closely sold up and are not taking on any additional business.

Fish Scrap.—Practically the entire production of menhaden fish is going into the manufacture of feeding material, and even at the ceiling price there is none offering on the market as producers are sold up on contracts and not disposed to take on additional business, even on "if and when made" basis.

Sulphate of Ammonia.—This material is still handled under allocation in conjunction with liquid ammonia and ammonium nitrate.

Nitrate of Soda.—There has not been any change in price of either domestic or imported brands but deliveries are still being allocated by Government agency.

Superphosphate.—With higher cost of raw material and everything entering into the manufacture of superphosphate, it is anticipated that OPA will authorize revised price commensurate with increased cost of production, and such new contracts as are being booked are subject to revision in price should the Government approve of a change.

Potash.—Manufacturers are now covered for their approximate requirements for the coming season, and the domestic production



FERTILIZER MATERIALS

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on **YOUR**
Requirements

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SUPERPHOSPHATE
DOUBLE SUPERPHOSPHATE
SULPHURIC ACID
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TANKAGES
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East St. Louis, Ill.
Greensboro, N. C.
Havana, Cuba
Houston, Texas
Jacksonville, Fla.

Wilmington, N. C.

Nashville, Tenn.
New Orleans, La.
New York, N. Y.
Norfolk, Va.
Presque Isle, Me.
San Juan, P. R.
Sandusky, Ohio

MENTION "THE AMERICAN FERTILIZER" WHEN WRITING TO ADVERTISERS.

will doubtless again be ample to take care of domestic requirements.

Bone Meal.—Both raw and steamed bone meal continue scarce and the market is strictly nominal.

Bags.—There is not much activity in new burlap bags as yet, but as the fall shipping season approaches, more interest will doubtless be manifested in view of the fact that it is now again permissible to ship fertilizer in new burlap bags.

CHARLESTON

Allocations of Nitrogenous Awaited. Cal-nitro Being Allocated for Mixing. Heavy Demand for Phosphate Rock Continues.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, June 26, 1944.

Organics.—Buyers are keenly interested to ascertain what allocations they will receive on nitrogenous material, as this picture has not yet been completely developed, due to producers' uncertainty as to the tonnage that they will be able to produce.

Bone Meal.—Limited amounts of domestic material have been sold at ceiling prices, but no lots of any size have been available in any direction.

Cal-nitro.—This material is being allocated for mixing, but the number of tons bought for this purpose will be applied in units of nitrogen against the buyer's allocation of ammonium nitrate or nitrogen solutions.

Blood.—Domestic is priced at \$5.53 per unit of ammonia (\$6.72 per unit N), f. o. b. Chicago. Feeders continue to take this material though the demand does not appear to be as pressing.

Phosphate Rock.—The demand on this continues heavy, and some producers are now unable to accept any new business on account of the fact that they are sold up on their estimated output.

CHICAGO

Shortage of Fertilizer Organics Becoming Serious for Coming Season. Feed Tankage Market Spotty.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, June 26, 1944.

Many fertilizer manufacturers are actually pleading for organics, and unless something unforeseen takes place, the shortage this coming season will be serious. It appears apparent that relief in some form or other should be extended to producers.

In feeds, wet rendered tankage markets are now somewhat spotty, but ceiling prices are fairly well maintained.

High grade ground fertilizer tankage, \$3.85 to \$4.00 (\$4.68 to \$4.86 per unit N) and 10 cents; standard grades crushed feeding tankage, \$5.53 per unit ammonia (\$6.72 per unit N); blood, \$5.38 (\$6.54 per unit N); dry rendered tankage, \$1.21 per unit of protein, Chicago basis.

FERTILIZER WAGE MINIMUM RAISED

The Secretary of Labor published on June 21st a "wage determination" covering the fertilizer industry, in which the minimum wage in the states east of the Rocky Mountains is raised to 40 cents an hour for employees engaged in the performance of contracts with agencies of the United States Government, subject to the provisions of the Walsh-Healey Public Contracts Act. In the states of New Mexico, Colorado, Wyoming, Montana, Idaho, Utah, Arizona, Nevada, California, Oregon and Washington the minimum wage had previously been set at 50 cents per hour. The new minimum will apply on all contracts for which bids are asked on or after July 8th. Notice of the proposed increase had been sent to the industry in April but no objections were registered.

Manufacturers' Sales Agents for **DOMESTIC**

Sulphate of Ammonia

Ammonia Liquor :: Anhydrous Ammonia

HYDROCARBON PRODUCTS CO., INC.

500 Fifth Avenue, New York

The 1944 War Convention

(Continued from page 10)

motion pictures have been shown over 3,000 times during the year to more than 200,000 persons; 12,624 times since January 1, 1940, to 838,000 persons. Pamphlet distribution totaled 269,000; a series of colored slides illustrating plant-food deficiency symptoms is being assembled; *Hunger Signs in Crops* is practically sold out, and a new printing has been authorized by the Board of Directors; cooperative research activities have been maintained, increased, in fact, through the activities of various fertilizer committees.

Our Association in Wartime

(Continued from page 12)

tion's existence except the two years in which the industry operated under the Code. There are many more eligible fertilizer manufacturers who are not members. The Association needs their cooperation and backing in order to do its most effective work. They need the services that the Association can render. I appeal to each and every one of you for assistance in obtaining new members.

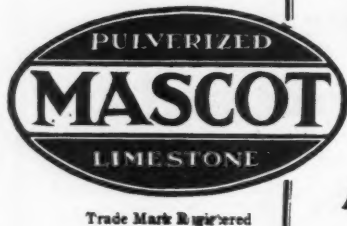
Many common problems have faced the industry throughout the year: many of our younger men, laborers and executives alike, are now in the armed services; other labor has been called into war plants for the production of munitions; labor-saving equipment to offset labor shortage has been hard to obtain; repair and replacement material has been scarce; transportation by truck and rail is getting more difficult as tires and trucks wear out and more burden is thrown on the rails. We have met these and many other difficulties and have delivered under these handicaps the greatest fertilizer tonnage in

history. Next year, in the face of possibly an even greater demand, even greater troubles will probably appear. We shall exert every effort to overcome them as we have in the past and to furnish the farmer his plant-food requirements so that he may meet the crop goals necessary to feed and clothe our armed forces and our civilian population.

We have kept our customer, the farmer, in a favorable economic condition in so far as his cost of fertilizer is concerned. The index number of what he pays for all he buys is 175 and the index number of the price of farm products is 196, while the index number of fertilizer prices is only 121, all compared to the same base period 1910-1914 as 100.

We shall face many new problems in the post-war period, Government competition, operation of war plants, the returning military personnel, for examples, but you will hear more of these matters later in the program. We must first meet the immediate situation as well as plan for the future. We must continue to furnish our farmers with the best and most economical plant-food mixtures that we can produce. In my opinion, next year our labor supply will be our worst bottleneck. One of the most effective means of overcoming the situation will be to keep fertilizer moving from our factories. We must work for earlier deliveries and longer seasons in which to produce and distribute our commodities. Governmental agencies are urged to assist us in convincing the farmer that goods must be ordered and accepted long in advance of their use. Such a movement is vital in meeting the tremendous task set for us.

In closing, let me pledge to our Government every aid and every type of cooperation that it is within our power to furnish in furtherance of the war effort.



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Carteret, N. J.	Havana, Cuba	Savannah, Ga.
Cayce, S. C.	Henderson, N. C.	Searsport, Maine
Chambly Canton,	Montgomery, Ala.	South Amboy, N. J.
Quebec, Can.	Norfolk, Va.	Spartanburg, S. C.
Charleston, S. C.	No. Weymouth,	West Haven, Conn.
Cincinnati, Ohio	Mass.	Wilmington, N. C.
Cleveland, Ohio		

The AMERICAN AGRICULTURAL CHEMICAL Co.

50 Church Street, New York City

SALES OFFICES



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Buffalo, N. Y.	East St. Louis, Ill.	Montreal, Quebec, Can.	Savannah, Ga.
Carteret, N. J.	Greensboro, N. C.	New York, N. Y.	Spartanburg, S. C.
Charleston, S. C.	Havana, Cuba	Norfolk, Va.	Wilmington, N. C.
Cincinnati, Ohio	Henderson, N. C.	No. Weymouth, Mass.	
Cleveland, Ohio	Houlton, Me.	Pensacola, Fla.	

MENTION "THE AMERICAN FERTILIZER" WHEN WRITING TO ADVERTISERS.

Convention Observations of a Beginner

(Continued from page 15)

is in bed at nine o'clock every evening. Learning of this rumor, Mr. Moore stated most emphatically the rumor was false, that he didn't get to bed generally until 9:15.

Getting back to the meetings, one of the most outstanding observations of this group was that, in spite of the heat, there wasn't one man attending the meetings with his coat off. Everyone wore a coat, which seemed most unusual and speaks well for those that are members of the fertilizer industry.

P. McG. Shuey was seen in the hotel lobby making a very striking appearance in a white suit. Have you ever noticed in a gathering of men, there always seems to be a Beau Brummel? This honor and distinction goes to Herb Rauchfuss, of Woodward and Dickerson, indisputably. Every time he appeared in the lobby he wore a different ensemble.

Although the advance itinerary of the Convention gave notice to the effect that golf this year would be taboo, one could hear rumblings upon arriving at the station, and various foursomes were being made up. In fact, they even went so far as to mention something about bridge in the evening.

It would seem from rotating observation, F. S. Lodge of the National Fertilizer Association was very helpful to many. He reminded one of a rolling information bureau—on call day or night, and always with a great big smile.

At this point, the ladies at the Registration Desk should come in for a word of praise for the efficient way they handled matters and answered inquiries.

In making a quick summary of the entire Convention, it was a most interesting meeting and well managed. Those responsible for the planning and carrying through of the details are to be congratulated on a splendid job well done.

Convention Attendance

(Continued from page 16)

Fertilizer and Fertilizer Materials (continued)

Farmers Warehouse, Jefferson, Ga.
R. S. Johnson
Federal Chemical Co., Louisville, Ky.
C. T. Brown
W. O. Flowers
R. M. Acree, Meridian, Miss.
S. M. Hackett, Shreveport, La.
J. R. Sargent, Nashville, Tenn.
Fidelity Chemical Corp., Houston, Tex.
Jas. D. Dawson, Jr.
Fowler Fertilizer Co., Covington, Ga.
R. R. Fowler
G. L. F. Soil Building Service, Ithaca, N. Y.
A. M. Eno
Georgia Belle Guano Co., Newnan, Ga.
J. R. Brown
Georgia Fertilizer Co., Valdosta, Ga.
Ray L. King
Growers Fertilizer Co., Fort Pierce, Fla.
J. E. Nobles
The Gulf Fertilizer Co., Tampa, Fla.
F. J. Woods
Howe, Inc., Minneapolis, Minn.
Roy M. Howe
Hydrocarbon Products Co., New York, N. Y.
J. P. Brinton, Jr.
International Minerals & Chemical Corp., Chicago, Ill.
H. B. Baylor
J. M. Coppinger
Fred D. Hopkins
A. Norman Into
B. E. Meguschar
F. W. Atkinson, Hartsville, S. C.
H. R. Bates, East Point, Ga.
W. L. Baughcum, Atlanta, Ga.
O. A. Dixon, East Point, Ga.
J. Rucker McCarty, East Point, Ga.
Miss Eloise Nelson, East Point, Ga.
J. W. Rutland, Atlanta, Ga.
Jackson Fertilizer Co., Jackson, Miss.
C. B. Morton
Jones & Laughlin Steel Corp., Pittsburgh, Pa.
James Macbeth, Jr.
Kershaw Oil Mill, Hershaw, S. C.
T. V. Hough
Knoxville Fertilizer Co., Knoxville, Tenn.
James W. Dean
J. C. Dean
N. C. Myers, Jr.
Liberty Limestone Co., Rocky Point, Va.
John R. Rice
Long Island Produce & Fertilizer Co., Riverhead, N. Y.
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 Alex. M. McIver & Son, Charleston, S. C.
 Alex. M. McIver
 Military Chemical Works, Kansas City, Mo.
 John E. Patterson
 Miller Bros. Co., Jefferson, S. C.
 J. C. Miller
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 A. S. Mills
 W. H. Larisey
 Minden Cotton Oil & Ice Co., Minden, La.
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 Monroe Oil & Fertilizer Co., Monroe, Ga.
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 Charles Ellis, Jr.
 Naco Fertilizer Co., New York, N. Y.
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 A. C. Diehl, Wilmington, N. C.
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 Walter Crady
 Old Deerfield Fertilizer Co., South Deerfield, Mass.
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 Weller Noble
 Pelham Phosphate Co., Pelham, Ga.
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 Planters Cotton Oil & Fertilizer Co., Rocky Mount,
 N. C.
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- Potash Co. of America, New York, N. Y.
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 Price Chemical Co., Louisville, Ky.
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 Producers Sales Co., San Francisco, Cal.
 Western Logan
 Red Diamond Mills, Cordele, Ga.
 James R. Bundrick
 Sam Bundrick
 N. E. Brown
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 Summers Fertilizer Co., Baltimore, Md.
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 Superior Fertilizer Co., Tampa, Fla.
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 Swift & Co. Fertilizer Works, Chicago, Ill.
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 Austin Cooke, New Orleans
 J. Walter Cooper, Atlanta, Ga.
 O. D. Culpepper, Albany, Ga.
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 A. L. Wiley, Norfolk, Va.
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 I. P. Thomas & Son Co., Camden, N. J.
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 U. S. Gypsum Co., Atlanta, Ga.
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 U. S. Potash Co., New York, N. Y.
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 C. Greilach
 Ware Bros. Agency, Tuscumbia, Ala.
 N. B. Ware, Jr.
 Weil's Fertilizer Works, Goldsboro, N. C.
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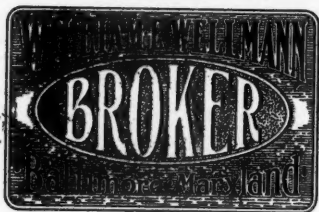
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 Lee Turner, Baltimore, Md.
 Bemis Bro. Bag Co., St. Louis, Mo.
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 David Morris, New Orleans, La.
 Charles D. Wagner, Birmingham, Ala.
 Blocks Terminal, Inc., Tampa, Fla.
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 Exact Weight Scale Co., Columbus, Ohio
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 Fulton Bag & Cotton Mills, Atlanta, Ga.
 J. O'H. Sanders
 Roy Gurkin
 George B. Hill
 Hammond Bag & Paper Co., Atlanta, Ga.
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 Mente & Co., New Orleans, La.
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 Oil, Paint & Drug Reporter, New York, N. Y.
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 Raymond Bag Co., Middletown, Ohio
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 Paul M. Seaman, Glenside, Pa.
 Raymond Pulverizer Div., Combustion Engineering
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 St. Regis Paper Co., New York, N. Y.
 Burton A. Ford, Baltimore, Md.
 Shuey & Co., Savannah, Ga.
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 Sturtevant Mill Co., Boston, Mass.
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 Union Special Machine Co., Chicago, Ill.
 H. A. McGwier, Atlanta, Ga.

Werthan Bag Corp., Nashville, Tenn.
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 Miss Josephine M. Feeley
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 D. S. Murph
 H. R. Smalley
 Edith G. Woodcock

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 Norris E. Dodd, Washington, D. C.
 Foreign Economic Administration
 O. E. Overseth, Washington, D. C.
 Office of Price Administration
 J. N. Reed, Atlanta, Ga.
 Soil Conservation Service
 Thos. L. Asbury, Athens, Ga.
 T. S. Buie, Spartanburg, S. C.
 A. K. Gayle, Lexington, Ky.
 O. D. Hall, Athens, Ga.
 Bert D. Robinson, Spartanburg, S. C.
 War Food Administration
 P. H. Groggins, Washington, D. C.
 War Production Board
 Dale C. Kieffer, Washington, D. C.
 W. Lehmann, Washington, D. C.
 V. M. Snellau, Washington, D. C.

OTHER GUESTS

Wm. A. Albrecht, University of Missouri, Columbia, Mo.
 Walter S. Brown, Georgia Agricultural Extension Service, Athens, Ga.
 Channing Cope, Station WAGA, Atlanta, Ga.
 D. A. Easom, Cotton Producers Ass'n., Atlanta, Ga.
 J. M. Gibson, Cotton Producers Ass'n., Atlanta, Ga.
 H. E. Hendricks, University of Tennessee, Knoxville, Tenn.
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This list contains representative concerns in the Commercial Fertilizer Industry. Including fertilizer manufacturers, machinery and equipment manufacturers, dealers in and manufacturers of commercial fertilizer materials and supplies, brokers, chemists, etc. For Alphabetical List of Advertisers, see page 33.



ACID BRICK

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

ACID EGGS

Chemical Construction Corp., New York City.

ACIDULATING UNITS

Chemical Construction Corp., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

AMMO-PHOS

American Cyanamid Co., New York City.

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Barrett Division, The, Allied Chemical & Dye Corp., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA LIQUOR

Barrett Division, The, Allied Chemical & Dye Corp., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Hydrocarbon Products Co., New York City.

AMMONIA OXIDATION UNITS

Chemical Construction Corp., New York City.

AMMONIATING EQUIPMENT

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AMMONIUM NITRATE SOLUTIONS

Barrett Division, The, Allied Chemical & Dye Corp., New York City.

AUTOMATIC ELEVATOR TAKEUPS

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Textile Bag Mfrs. Association, Chicago, Ill.

BAGS—Paper

Bagpak, Inc., New York City
Bemis Bro. Bag Co., St. Louis, Mo.
St. Regis Paper Co., New York City.
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Textile Bag Mfrs. Association, Chicago, Ill.
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Huber & Company, New York City.
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Bagpak, Inc., New York City.
St. Regis Paper Co., New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

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Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

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Sackett & Sons Co., The A. J., Baltimore, Md.

BELTING—Chain

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Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

BELTING—Leather, Rubber, Canvas

Sackett & Sons Co., The A. J., Baltimore, Md.

BOILERS—Steam

Atlanta Utility Works, East Point, Ga.

BONE BLACK

American Agricultural Chemical Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Huber & Company, New York City.

BONE PRODUCTS

American Agricultural Chemical Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmalz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

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Pacific Coast Borax Co., New York City.

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Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Dickerson Co., The, Philadelphia, Pa.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
Keim, Samuel L., Philadelphia, Pa.
McIver & Son, Alex. M., Charleston, S. C.
Schmalz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

BUCKETS—Elevator

Link-Belt Company, Philadelphia, Chicago
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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BUYERS' GUIDE

For an Alphabetical List of all the
Advertisers, see page 33

BUCKETS—For Hoists, Cranes, etc., Clam Shell, Orange Peel, Drag Line, Special; Electrically Operated and Multi Power

Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.

BURNERS—Sulphur

Chemical Construction Corp., New York City.

BURNERS—Oil

Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.

CABLEWAYS

Hayward Company, The, New York City.

CARBONATE OF AMMONIA

American Agricultural Chemical Co., New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.

CARS—For Moving Materials

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CARTS—Fertilizer, Standard and Roller Bearing

Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

CASTINGS—Acid Resisting

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.

CASTINGS—Iron and Steel

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CEMENT—Acid-Proof

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

CHAIN DRIVES—Silent

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHAINS AND SPROCKETS

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHAMBERS—Acid

Chemical Construction Corp., New York City
Fairlie, Andrew M., Atlanta, Ga.

CHEMICAL APPARATUS

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

CHEMICALS

American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., E. I., Wilmington, Del.
Huber & Company, New York City.

CHEMICALS—Continued

International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Phosphate Mining Co., The, New York City.
Wellmann, William E., Baltimore, Md.

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Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CHEMISTS AND ASSAYERS

Gascoyne & Co., Baltimore, Md.
Shuey & Company, Inc., Savannah, Ga.
Stillwell & Gladding, New York City.
Wiley & Company, Baltimore, Md.

CLUTCHES

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

CONCENTRATORS—Sulphuric Acid

Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

CONDITIONERS AND FILLS

American Limestone Co., Knoxville, Tenn.
Dickerson Co., The, Philadelphia, Pa.
Phosphate Mining Co., The, New York City

CONTACT ACID PLANTS

Chemical Construction Corp., New York City

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Tennessee Corporation, Atlanta, Ga.

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Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmalz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

CRANES AND DERRICKS

Hayward Company, The, New York City
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

CYANAMID

American Agricultural Chemical Co., New York City
American Cyanamid Co., New York City.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Jett, Joseph C., Norfolk, Va.
Wellmann, William E., Baltimore, Md.

DENS—Superphosphate

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BUYERS' GUIDE

For an Alphabetical List of all the
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DISINTEGRATORS

Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

DRYERS—Direct Heat

Sackett & Sons Co., The A. J., Baltimore, Md.

DRIVES—Electric

Link-Belt Company, Philadelphia, Chicago

DUMP CARS

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

DUST COLLECTING SYSTEMS

Sackett & Sons Co., The A. J., Baltimore, Md.

ELECTRIC MOTORS AND APPLIANCES

Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

ELEVATORS

Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

ELEVATORS AND CONVEYORS—Portable

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

ENGINEERS—Chemical and Industrial

Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

ENGINES—Steam

Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.

EXCAVATORS AND DREDGES—Drag Line and Cableway

Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Link Belt Speeder Corp., Chicago, Ill., and Cedar
Rapids, Iowa.

FERTILIZER MANUFACTURERS

American Agricultural Chemical Co., New York City.
American Cyanamid Company, New York City.
Armour Fertilizer Works, Atlanta, Ga.
Farmers Fertilizer Company, Columbus, Ohio.
International Minerals and Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp.,
Tampa, Fla.

FISH SCRAP AND OIL

Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Wellmann, William E., Baltimore, Md.

FOUNDERS AND MACHINISTS

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Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GARBAGE TANKAGE

Wellmann, William E., Baltimore, Md.

GEARS—Machine Moulded and Cut

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

GEARS—Silent

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

GELATINE AND GLUE

American Agricultural Chemical Co., New York City.

GUANO

Baker & Bro., H. J., New York City.

HOISTS—Electric, Floor and Cage Operated, Portable

Hayward Company, The, New York City.

HOPPERS

Atlanta Utility Works, East Point, Ga.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

IMPORTERS, EXPORTERS

Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Wellmann, William E., Baltimore, Md.

IRON SULPHATE

Tennessee Corporation, Atlanta, Ga.

INSECTICIDES

American Agricultural Chemical Co., New York City.

LACING—Belt

Sackett & Sons Co., The A. J., Baltimore, Md.

LIMESTONE

American Agricultural Chemical Co., New York City.
American Limestone Co., Knoxville, Tenn.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
McIver & Son, Alex. M., Charleston, S. C.
Wellmann, William E., Baltimore, Md.

LOADERS—Car and Wagon, for Fertilizers

Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Acid Making

Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.
Duriron Co., Inc., The, Dayton, Ohio.
Fairlie, Andrew M., Atlanta, Ga.
Monarch Mfg. Works, Inc., Philadelphia, Pa.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Coal and Ash Handling

Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.

MACHINERY—Elevating and Conveying

Atlanta Utility Works, East Point, Ga.
Hayward Company, The, New York City.
Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

MACHINERY—Grinding and Pulverizing

Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

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MAGNETS

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MANGANESE SULPHATE

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Tennessee Corporation, Atlanta, Ga.

MIXERS

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Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

NITRATE OF SODA

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New York City.
Bradley & Baker, New York City.
Chilean Nitrate Sales Corp., New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

NITRATE OVENS AND APPARATUS

Chemical Construction Corp., New York City.

NITROGEN SOLUTIONS

Barrett Division, The, Allied Chemical & Dye Corp., New York City.

NITROGENOUS ORGANIC MATERIAL

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
DuPont de Nemours & Co., Wilmington, Del.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
McIver & Son, Alex. M., Charleston, S. C.
Smith-Rowland Co., Norfolk, Va.
Wellmann, William E., Baltimore, Md.

NOZZLES—Spray

Monarch Mfg. Works, Philadelphia, Pa.

PACKING—For Acid Towers

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Chemical Construction Corp., New York City.

PANS AND POTS

Stedman's Foundry and Mach. Works, Aurora, Ind.

PHOSPHATE MINING PLANTS

Chemical Construction Corp., New York City.

PHOSPHATE ROCK

American Agricultural Chemical Co., New York City.
American Cyanamid Co., New York City
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Coronet Phosphate Co., New York City.
Huber & Company, New York City.
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Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Phosphate Mining Co., The, New York City.
Ruhm, H. D., Mount Pleasant, Tenn.
Schmaltz, Jos. H., Chicago, Ill.
Southern Phosphate Corp., Baltimore, Md.
Virginia-Carolina Chemical Corp. (Mining Dept.), Richmond, Va.
Wellmann, William E., Baltimore, Md.

PIPE—Acid Resisting

Duriron Co., Inc., The, Dayton, Ohio.

PIPES—Chemical Stoneware

Chemical Construction Corp., New York City.

PIPES—Wooden

Stedman's Foundry and Mach. Works, Aurora, Ind.

PLANT CONSTRUCTION—Fertilizer and Acid

Chemical Construction Corp., New York City.
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Sackett & Sons Co., The A. J., Baltimore, Md.

POTASH SALTS—Dealers and Brokers

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
Schmaltz, Jos. H., Chicago, Ill.
Wellmann, William E., Baltimore, Md.

POTASH SALTS—Manufacturers

American Potash and Chem. Corp., New York City.
Potash Co. of America, New York City.
International Minerals & Chemical Corp., Chicago, Ill.
United States Potash Co., New York City.

PULLEYS AND HANGERS

Atlanta Utility Works, East Point, Ga.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

PUMPS—Acid-Resisting

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Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

PYRITES—Brokers

Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., New York City.
Wellmann, William E., Baltimore, Md.

QUARTZ

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

RINGS—Sulphuric Acid Tower

Chemical Construction Corp., New York City.

ROUGH AMMONIATES

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McIver & Son, Alex. M., Charleston, S. C.
Schmaltz, Jos. H., Chicago, Ill.
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SCREENS

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SEPARATORS—Air

Sackett & Sons Co., The A. J., Baltimore, Md.

SEPARATORS—Including Vibrating

Sackett & Sons Co., The A. J., Baltimore, Md.

SEPARATORS—Magnetic

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SHAFTING

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Link-Belt Company, Philadelphia, Chicago.
Sackett & Sons Co., The A. J., Baltimore, Md.
Stedman's Foundry and Mach. Works, Aurora, Ind.

SHOVELS—Power

Link-Belt Company, Philadelphia, Chicago.
Link-Belt Speeder Corporation, Chicago, Ill., and Cedar
Rapids, Iowa.
Sackett & Sons Co., The A. J., Baltimore, Md.

SPRAYS—Acid Chambers

Monarch Mfg. Works, Inc., Philadelphia, Pa.

SPROCKET WHEELS (See Chains and Sprockets)

STACKS

Sackett & Sons Co., The A. J., Baltimore, Md.

SULPHATE OF AMMONIA

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Barrett Division, The, Allied Chemical & Dye Corp., New
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SULPHUR

Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Freeport Sulphur Co., New York City.
Texas Gulf Sulphur Co., New York City.

SULPHURIC ACID

American Agricultural Chemical Co., New York City
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Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.

SULPHURIC ACID—Continued

U. S. Phosphoric Products Division, Tennessee Corp.,
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SUPERPHOSPHATE

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Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
Huber & Company, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmalts, Jos. H., Chicago, Ill.
U. S. Phosphoric Products Division, Tennessee Corp.,
Tampa, Fla.
Wellmann, William E., Baltimore, Md.

SUPERPHOSPHATE—Concentrated

Armour Fertilizer Works, Atlanta, Ga.
International Minerals & Chemical Corporation, Chicago, Ill.
Phosphate Mining Co., The, New York City.
U. S. Phosphoric Products Division, Tennessee Corp.
Tampa, Fla.

SYPHONS—For Acid

Monarch Mfg. Works, Inc., Philadelphia, Pa.

TALLOW AND GREASE

American Agricultural Chemical Co., New York City.

TANKAGE

American Agricultural Chemical Co., New York City.
Armour Fertilizer Works, Atlanta, Ga.
Ashcraft-Wilkinson Co., Atlanta, Ga.
Baker & Bro., H. J., New York City.
Bradley & Baker, New York City.
International Minerals & Chemical Corporation, Chicago, Ill.
Jett, Joseph C., Norfolk, Va.
McIver & Son, Alex. M., Charleston, S. C.
Schmalts, Jos. H., Chicago, Ill.
Smith-Rowland, Norfolk, Va.
Wellmann, William E., Baltimore, Md.

TANKAGE—Garbage

Huber & Company, New York City.

TANKS

Sackett & Sons Co., The A. J., Baltimore, Md.

TILE—Acid-Proof

Charlotte Chem. Laboratories, Inc., Charlotte, N. C.

TOWERS—Acid and Absorption

Chemical Construction Corp., New York City.
Fairlie, Andrew M., Atlanta, Ga.

UNLOADERS—Car and Boat

Hayward Company, The, New York City.
Sackett & Sons Co., The A. J., Baltimore, Md.

UREA

DuPont de Nemours & Co., E. I., Wilmington, Del.

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VALVES—Acid-Resisting

Atlanta Utility Works, East Point, Ga.
Charlotte Chem. Laboratories, Inc., Charlotte, N. C.
Duriron Co., Inc., The, Dayton, Ohio.
Monarch Mfg. Works, Inc., Philadelphia, Pa.

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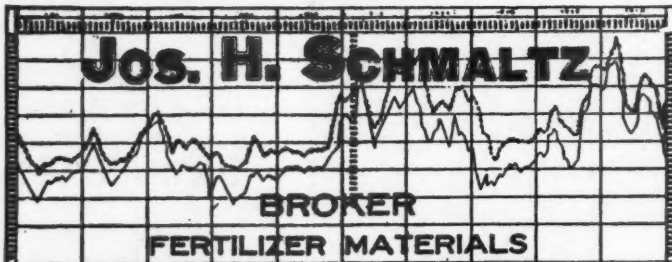
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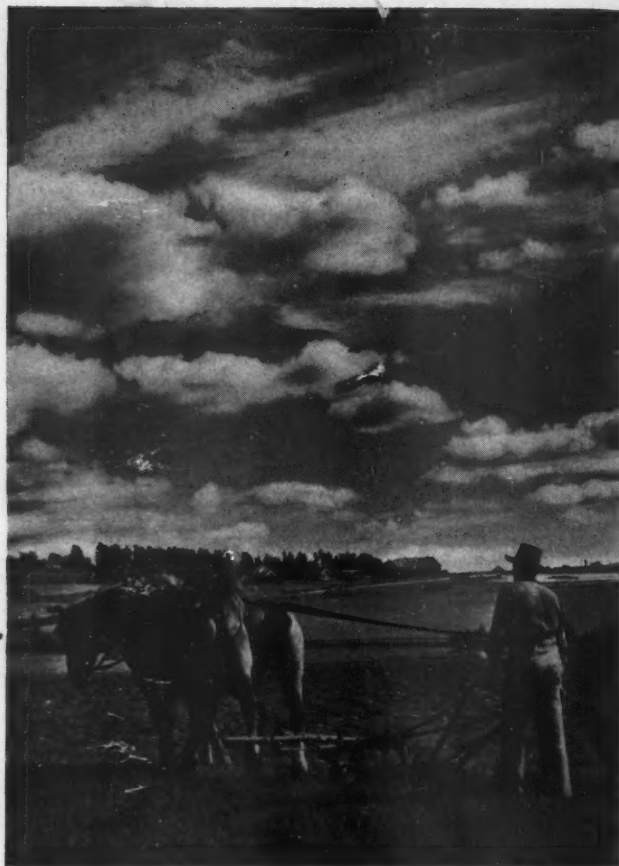
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